THE

SOUTHERN AGRICULTURIST.

MAY, 1829.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*Summary of the various plans of Planting Rice, as furnished in the Answers to Mr.* WASHINGTON'S *Queries; by* A CONSTANT READER.

Mr Editor,—I now send you an abstract of the different plans of planting Rice, as furnished in the answers to your various queries published in the first volume:—Mr. Hugh Rose, cultivates *inland* swamp, reduces it to good tilth by ploughing and digging; harrows twice—the land being as dry as practicable. Begins to plant the last of March, or the first of April; occasionally changes his seed; sows two bushels to the acre, in rows fourteen inches apart; does not point-flow; hoes twice before he waters; is not an advocate for early or long watering—never beyond ten or twelve days, until the Rice is in the second joint. Considers fifty bushels to the acre a fair crop. Thinks a rotation of crops would be beneficial.

Mr. Charles Munnerlyn, puts his banks in good order, cleans his ditches, and breaks up his land as early in the winter as possible. Harrows with a heavy harrow; begins to plant on the latter end of March, so as to use the last spring-tide to flow with; plants full to the hand; thinks the best time for planting Rice from the 10th April to 10th May. Selects his seed as free as possible from volunteer.

If the Rice is good, does not think a change of seed necessary. The best method to procure good seed, is to have a small quantity hand-picked whilst in the straw, to avoid the red Rice, and this planted on fresh land. The part last planted is generally most free of volunteer. His rows fourteen inches from centre to centre, ninety to the task; two bushels and one peck to the acre; string plants; point-flows for the following reasons: 1st. To prevent a crop of grass from coming on too soon. 2d. To float trash away. 3d. To protect the Rice from birds. 4th. To secure it from worms that are apt to breed when kept dry. He flows his uneven fields from four to six days—but his level fields that flow well, he prefers flowing from twenty to thirty days, as soon as the Rice is well up; if the weather is cool, thirty days; if warm, twenty. When the water is first put on, let it be deep, so as to float the trash, which should be immediately taken off, then leak off the water until the tops of the Rice are seen. After the point-flowing is off, the land well dried, and the Rice that has fallen down recovered, it should be hoed; that which has been flowed only six days, is flowed as soon as it has been hoed; that which has been kept a long time under water, is hoed twice or thrice, and then put on the joint flowing which is not taken off until the Rice is fit for the hook. The object of flowing is to kill grass. Mr. M. thinks from two to three barrels good cropping—two and a quarter to the acre a good average crop. New or fresh land, is flowed directly after harvest; as soon as severe weather sets in, it is dried until the stubble is burnt—it is then flowed until within a few days of planting. Land that is so low as scarcely to drain below the surface, the stubble is turned as soon as possible in winter, and flowed, the water being often changed on account of the sediment. Rice, succeeding the dry culture, is always more productive. Mr. Munnerlyn planted Cotton on Rice land, and found it grew well the succeeding year after Rice. He thinks that land polluted with volunteer would be greatly improved by planting it in dry culture.

Mr. A. Watson, ploughs up his land as early as possible in the fall; harrows it well in the spring, and cleans out his drains properly; begins to plant from the 12th to the 15th March; selects his seed as clear of volunteer as possible—approves of a change of seed—plants sixty rows

to the task; on marsh land three bushels—on clay two, sometimes less than two; scatters in the trench. On marsh lands which are grassy, he point-flows heavily and soaks well; he has flowed from nine to twelve days, and soaked as long. On clay lands he prefers not to point-flow, and if he does, never longer than two or three days. He prefers not to put on the water until he hoes twice, unless pushed with grass, *then* he keeps it on thirty days. He would, if hard pushed with grass, put on the water, and pick the grass in the water; ploughs *in* all his stubble, and keeps the land under water to rot the stubble. Highly approves of lime, if it were not for the expense and trouble. He scatters between eighty and ninety bushels to the acre, on land well harrowed; thinks sixty bushels a good crop; generally makes fifteen barrels, with his provisions, to the hand; sums up the whole with these observations: fallow your land well in winter—be industrious—attend strictly to the hoeing—pick it clean, and you may expect a fair crop.

Mr. J. H. Claiborne, digs the land as much as possible, in the usual mode; pulverizes it with the plough or hoe, as early in winter as possible; begins to plant about the middle of March, if the land is in order, if not, 1st April; selects his seed from the largest and best filled grain; puts seventy-two rows to the task; when the land is in good order; thinks two bushels more than sufficient; scatters in the trenches; generally hoes his crop twice before he flows; keeps on the water according to circumstances eighteen to twenty days; thinks three, and sometimes four barrels should be made to the acre.

Roswell King, jun. burns off his stubble in Jan. which allows the birds to take off the red Rice; ploughs and harrows; begins to plant about three or four days before the high tides in March, so as to have his fields well flowed; plants the old lands first; the second high tides he plants his strongest lands, so as not to have his Rice ripen all at once. During the winter, he selects twenty or twenty-five bushels of the best seed that had been selected from the year before; this is planted in a separate field called the seed field. The selecting of seed is easily done by invalid negroes on rainy days. He never puts more than seventy rows to the task, and not more than one bushel and a quarter seed to the acre. He never point-flows because it spindles the Rice, and prevents its

tillering. After the Rice is up it is not flowed until the full moon in May. If the weather is very dry, it is flowed twelve to thirty hours, but if the Rice be vigorous, never until May: having had *two* or *three* hoeings. As soon as his Rice is planted, he flows as deep as possible to clear the field of trash, which is taken off with a long handled rake, without touching the ground. His May flowing continues six or eight, and sometimes ten days—if there are occasional rains, he never flows again, until the heads are swelling; he then keeps on the water until harvest, sweetening with every tide; thinks three barrels or eighteen hundred pounds to the acre a good crop; has made four, and rather more to the acre. He gives his last working to the Rice when in the water, the hands go in and stir the land, or as *they say*, muddy the water, this gives strength to the plants in heading; approves of the use of lime. He thinks a rotation of crops necessary: Cotton, Cane, or any other dry crop, but care must be taken that the Rice does not lodge, and this is done by topping in May, cut off full one half, and again in June and July. Were it practicable, he would cut every acre within four inches of the ground.

Mr. C. E. Rowand, as soon as possible burns his stubble, cleans his ditches, and commences his ploughing, which is kept up during the winter. About the latter end of February, the fields are flooded deep, and kept so until the day before he begins to plant; he begins about the 28th of March. He selects his seed; never admits horned cattle into his fields; devotes annually one or two squares to dry culture; puts eighty-four rows to the task; uses the trenching plough; scatters the seed in the trench; does not approve of the point-flow; gives one hoeing, turning over the sods deep; he then flows deep, keeping it over the Rice three or four days, to destroy grass; the water is then leaked off until the tops of the Rice are seen; the leak is then stopped until the Rice recovers its erect posture; would, if in grass, by all means put on the water; before he flows, the grass will readily yield to the hoe; thinks two barrels and a half a good crop to the acre—three a great one; plants five acres to the hand, besides provisions; uses the plough and horse harrow.

Mr. Wm. Small, has his land well banked, ditched and drained, and turned deep with the plough or hoe, early in winter; then flows off and on, say flows with one spring tide,

and keeps on the water until the next spring tide, this will rot the stubble and enrich the land. About the middle of Feb. turn off the water, and clean your ditches and drains. About the 16th March, begin to trench, so as to be ready for planting on the 25th March; the trenches three or three and a half inches wide; ninety rows to the quarter acre; changes his seed every two years; hand-picks some every year; point-flows to keep clear of birds; hoes deep when the Rice gets into the fifth leaf, and flows four days over the tops of the Rice, then eases off the water until the tops of the Rice are seen. He keeps the water on or about twelve or fifteen days.

Mr. T. F. Goddard, drains his land well, and has tight trunks and banks; plants early to get out of the way of birds, both spring and fall; he selects his seed; thinks three grains of red Rice in one hundred, good seed; puts ninety rows to the task. String plants to prevent the Rice from being cut in hoeing. He point-flows when he covers with earth, but when he does not cover, the point water serves as the point and sprout water. He hoes twice before he puts on the water, and keeps it twelve or fifteen days, according to circumstances; considers fifty bushels to the acre, or twelve and a half barrels to the hand, a good crop. As soon as the fields are gleaned, he puts on the water to sprout the Rice wasted in harvest. In trenching, he prefers the trenching plough.

Your obedient servant,

A CONSTANT READER.

N. B. I send the abstract, and may make some observations for a future number.

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Note, by the EDITOR.

We thank the "*Constant Reader*" for his very useful summary, and hope he will favour us with his own observations on the important culture he is himself largely embarked in. We should especially be happy to have some communications on the various thrashing machines brought to the notice of the *Agricultural Society of South-Carolina*, from time to time. Various reports on these machines have been submitted to that very useful body, none of

which have been made public. Ought not the failures, *if they have failed*, to be disclosed with their causes. The report made by Mr. Elias Horry, ought especially to be published, as containing some information of a most useful kind, on the effect of the foot-stalk in grinding. We should be glad to have the opinion of that gentleman, and of others, on this, and other points connected with the preparation of Rice for market. J. G.

ART. II.—*Hints to Market Gardeners, and on the Establishment of a Horticultural Society in Charleston.*

"St. Andrew's Parish, March, 1829.

Mr. Editor,—The work you have engaged in will be of great advantage to the Southern States, and I hope every planter, every farmer, and even every *gardener*, will contribute whatever they can to add to our knowledge in cultivating the ground. Great rivers are made up of smaller ones—these are formed by the brooks, and the brooks are fed by drops of rain. Every drop that reaches the ground, either goes to nourish vegetation on the spot where it falls, or it serves to increase the stream of some river which bears on its bosom the trade and commerce of the land. Thus it is with the cultivation of a country. A hoe, or spade, or plough "kept moving," adds to our strength and wealth, either by nourishing some hardy son or daughter of the soil, or by adding to the stream of commerce which enriches us. The application of the simile to the increase of knowledge through your excellent work, is a very trite one, but will strike every one.

But your book must not be exclusively devoted to country matters; I claim a corner now and then for Charleston, and its concerns also: for, although I admit, that whatever affects the country is felt by the town, and acknowledge that the most important city affairs are frequently purely local, and have but little interest for the State at large, yet I maintain, that the city of Charleston is of vital importance, not only to our own State, but to the whole Southern States,

and ought to meet their warmest support in opposition to the monopolizing spirit of the great northern cities.—Although not myself an inhabitant, or owning property *in town*, I may take up this subject at a future day, when you have room for it, and I think it highly deserving the notice of some of our ablest writers, whose attention, as well as yours, sir, I invite to the subject. But at this time I aim at humbler game than such important concerns, as Dr. Cooper says, "*à nos moutons.*"

I have been led, from particular circumstances, to think much on gardening, and to devote myself much to it, and I have conversed occasionally a good deal with market gardeners on their *mistaken policy.*

The high price of vegetables in Charleston, Mr. Editor, is in my opinion a great misfortune. It helps to keep up the expense of living there, much more than is generally supposed, and in that way, has a decided influence on the population of the place. High prices, therefore, thus affect the immediate profit of the market gardeners themselves, and destroy their trade; but they do so in a variety of ways, which these people little imagine, besides thus annually helping to reduce the number of their customers.

In the first place, high prices induce planters near Charleston to plant all the most lucrative crops.

On my way to town, I find in various directions extensive patches of Green Peas, and other veget ables, evidently intended for the supply of Charleston market, and this on plantations, whose owners would find Cotton, Indigo, or some other field culture, more profitable in the long run, and unattended by the demoralizing influence of town intercourse. Many wealthy individuals in the town itself, are tempted by the extravagant prices required for every thing, to sell the vegetables raised in their gardens, instead of consuming them. None of these could interfere if prices were reduced.

In the second place, high prices prevent consumption. In other countries, the garden ground around the cities furnish a principal part of the food of the middling and lower classes, and are every where immensely profitable. In consequence of the use of garden stuffs, a little meat goes a great way, and in some parts, Olive Oil supersedes the use of meat altogether, which it can only do when used with vegetables. But, in Charleston, few vegetables are

seen at table, unless upon particular occasions, because they are too expensive for common food. How many loaves of bread would be used, if our present loaf were to be raised to twenty-five cents from six and a quarter? Would it not stop the consumption altogether except amongst the rich? On the contrary, if the loaf were made four times the size, would not the use of bread take place of that of Hominy, and even Rice, almost entirely?* In England, there was an enormous tax upon Coffee formerly, for the purpose of revenue. This prevented consumption, and defeated the object of the government, for no income was received. It was suggested, that by reducing the tax greatly, more would be gained from the additional consumption; and so it was. Coffee, which before was only used by the rich, on reducing the tax very low, became the food of the poor, and brought *in a great revenue* accordingly. So I think it would be found by our market gardeners, if they reduced their prices. Vegetables, which are now only used by the wealthy, would, if cheap, become the common food of all classes, and the gardeners' trade be increased, and their incomes also.

Again, sir, high prices induce the *Yankees*, those terrible fellows, who so much interfere with the whole mechanical industry of the Southern States, to pour in Beets and Turnips in barrels, *Celery in boxes*, Cabbages and Potatoes in ship loads, which glut our markets, and when not fresh, poison the folks. The great use of Rice itself would give way at least one half, if vegetables were furnished at a low rate.

Mr. Editor, I think they ought to introduce the universal use of *copper coin* in town, for low prices which cannot

* Bread, which is called the staff of life, and which ought to be furnished to the poor on the lowest terms, is, in Charleston, a leading article of traffic, of the most demoralizing kind. The nominal price of the loaf, is six and a quarter cents—the actual value from the baker is twenty loaves for a dollar. This arrangement, which occasions a loss of twenty-five per cent. to the poor, is made for other purposes than to give a profit to the baker, to whom all the profit on bread ought to belong. It is expressly made in order to lodge it, where the profit on every other necessary of life *furnished to the poor* is lodged, in the grocery shops. But what are these shops? The retail liquor stands of the city—and what is the *effect on servants*—on the poor, and on the children of the poor, resorting to these for all their supplies? Let the magistracy of the city say. It is to this *effect* I chiefly call their attention. In some well regulated countries, the wine houses are prohibited from dealing in *any other commodity* than liquor, and so ought it to be where a population, so very frail, as a part of that of Charleston, exists.

exist without small money, would be the consequence in many other articles besides vegetables. In these last, a reduction would benefit the market gardeners, by preventing the huckstering and stealing vegetables, more than all the laws, ordinances, and public whippings: for a negro would no longer, by plundering two or three heads of Cabbage, a couple of bunches of Turnips, or Onions, be able to provide himself with what ought to cost nearly a day's work—I mean owner's wages, victuals, and lodging. The use of copper coin would benefit the gardener in another way by bringing the common measure of the value of labour and of money to their proper standard, and by reducing, consequently, a labourer's wages, to about thirty-seven and a half cents per day, or perhaps still less.*

I believe, sir, the institution of a Horticultural Society in Charleston, similar to those in the Northern cities and counties, would be of great advantage to the place, and a great encouragement to the enterprizing and industrious market gardener, by giving him an opportunity of making himself known. I am surprised our former Intendants and Councils, many of whom have been practical men, and devoted to their gardens, have never patronized such an association. In our climate, what noble fruits—what superb flowers would be produced at the meetings of such a society. What a variety of vegetables originating in the most distant

* What I mean, Mr. Editor, is this: The lowest price of any *job, however trifling*, done by a day-labourer in Charleston, generally speaking, is six and a quarter cents. The *fourpence*, as it is termed, is thus the standard of the value of work, which is calculated upwards from it, in proportion of *time*, not of *labour*. An *hour's* work is *twice fourpence*, or twelve and a half cents, no matter what the work is. A day's work is the price of eight hour's time, or one dollar, be the work light or laborious. The real value of *money* is hence greatly depreciated in the estimation of our common people, while the real value of *labour* is exorbitantly enhanced. What must be the effect of such regulations as enable common labourers to exact for two hour's work, the price of a week's support, or for a day's labour what will furnish *allowance* for the labourer, sufficient for eight weeks! Who ought to inquire into the effect of such a state of affairs?

From the day-labourer it again extends itself upwards. Wishing to hire a bricklayer lately to build a chimney in the country, I applied to one who asked me, *although a negro*, one dollar and a half per day! Struck with the exorbitancy of his demand, I attempted to expostulate: but my man had his reply at hand, "Master, if a common labourer on the wharf gets a dollar a day, surely a bricklayer ought to get more." Is it wonderful that the capital of South-Carolina should lose its inhabitants? What fortune can stand such exactions? But its commerce, Mr. Editor, is subject to charges in proportion to labourers' hire. Its commerce is leaving it!

lands would be displayed! *Would not the ladies of Charleston take an interest in such an institution, Mr. Editor, and assist in the exhibition which would be got up for the anniversary* of so popular an undertaking? I hope that some public-spirited individual, or what would be better, our Intendant himself, who has the improvement of his native place so much at heart, will take the necessary steps to organize such a society.

If our planters could, by this means, be induced to take an interest in their town gardens, or to amuse themselves by cultivating small spots of ground near the city, the summer months would not be so horribly tedious, or a Northern jaunt a matter of necessity. A Horticultural Society would have meetings, and offer premiums for the finest fruit, for remarkable flowers, or new vegetables, and for experiments with plants of all kinds. Even many of the new crops recommended through your work, could be first introduced through such a society, and the seeds propagated and dispersed.

But I have said enough—if you give this a place, I may occasionally send you a hint like the following, to my friends the market gardeners, whose system of cultivation I think highly of, and whose industry deserves encouragement.

I am, Mr. Editor, your obedient humble servant,

SENEX.

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A hint to Market Gardeners near Charleston.

Observing, in a visit I made to town last year, a herd of very fine milch cows, about fifty in number, driven by a man and boy. I inquired where they were going with them. The man replied, "*up the path to graze.*" The grazing ground up the path, is, certainly, Mr. Editor, not the very best in the world, but I beg leave, through your very useful journal, to suggest to some enterprizing Charleston Neck Gardeners, a practicable, and I believe to a certain extent, a profitable way of applying this circumstance.

Suppose any one owning or hiring land, within a mile or so of town, were to raise a sufficiency of green food, in a

regular succession of crops through the year, for twenty or thirty cows. Let the person also provide on his ground or farm, good sheds, divided into single stalls, sufficient for the number he can feed daily, and having also provided a steady man, and, *if necessary*, a boy, let him then receive as many milch cows as he can entertain well on moderate *board wages*, by the month or year; and having provided a steady man, and, if necessary, a boy, sending for them daily, and returning them back.

I should imagine, sir, that persons in town, would be willing to pay a fair price for a daily feed of green Oats, Barley, Rice, or Grass, furnished to their cows; that the certainty of having them regularly called for *to the hour*, driven out with care; kept under a shed from the weather; driven back again carefully at a given hour, *with all the milk*, would be sufficient inducement for many to subscribe to such a plan.

As regards the gardener or farmer, he would sell his green crop; if he managed well, he would collect an ample dung hill: if he did not ask too much, and *kept good entertainment*, he would not fail to have many excellent, well behaved, and quiet customers, and ultimately make money.

The proper way to estimate the pay for such matters is by a calculation of the wages of labour required to be provided by the year; the rent of land, and an interest of ten or fifteen per cent. on the value of the buildings. This mode of estimating profit, is too little practised in Carolina, particularly in Charleston, hence the complaints of want of work, empty streets, &c., because *high prices discourage employment, and drive away population.* I am, sir, &c.

S.

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Note, by the EDITOR.

Our correspondent has introduced a subject of deep importance to the whole Southern country, the price of labour in our Southern cities, and the mistaken notion of profits, wages, and so forth, in the South generally, for these affect all planters, and in fact destroy the cities themselves. Charleston, which, from its local advantages, ought

to have increased beyond measure for years past, has, we are convinced, fallen into much of its imputed decay, from the mistaken policy of its inhabitants, who ought to invite the planters, and even strangers, to fill its houses by the conveniences and cheapness of living in every respect, and not, by a contrary conduct, make them seek out other places of residence and resort.

This city, on the other hand, which pays so large a proportion of the State taxes, and thus relieves agriculture from the pressure; which is the place of safe deposit of the crops and funds of so many, who scarcely visit it; which, by its capital, supports the planter in time of need, and yet so wonderfully keeps up the price of produce, ought also to be supported by every one who can give his aid, and this, *strictly speaking, on principles of self interest.*

The greatest exertions are now making in the Northern cities, to draw from our Southern towns the export trade of the country. The import trade has already fled far away *coastwise.* It was gone before those most concerned in it were aware of the fact, and with it went much of the export trade also. But some exertion ought to be made to prevent the loss of the residue, as with it must go the loss of the *factorage.* This will be ruinous to the planters, for their crops will be taken from under their own eyes, converting them into shipping merchants, subject to the six-months, credits, and other usages of strange and remote places, involving them in bills of exchange, damages on bills of exchange, insurances, and total losses from want of insurance, &c.

In some of the Northern cities *no wharfage* is charged on produce. In Boston an extensive line of Liverpool packets is about to be established, the proprietors of which have given out, that they intend to carry Cotton, &c. at a freight so low as to draw the foreign export trade from the Southern States, to Liverpool and elsewhere, through that channel. They acknowledge that they will lose by these ships; but their object, they say, is to draw the commission business of selling and buying Southern crops that way, which will pay well in return.

These "terrible Yankees," as *Senex* calls them, are too deep for us, they "*undermine* us" as the cant term in Charleston is. Why will the Charleston people not "*countermine?*" Has the maxim of the wise Fenelon not yet

reached their latitude? Have they never heard that "Le vrai moyen de gagner beaucoup, est de ne vouloir pas trop gagner, et de savoir perdre apropos." The Yankees know this principle well—practise it, and get rich; a Southerner *will* not—and starves.

What might not be accomplished by our young men, ingrafting on the high-minded, honourable notions of the South, some of the good qualities of the Yankees, their frugality, their industry, their perseverance. They do business cheap and well, let the natives of the South do business cheaper and better. If this maxim was adopted, we should have no more Yankees amongst us, for they would be unable to live; while we should thrive.

The chief support of the Southern cities now, is the exportation of the agricultural produce; but this cannot long be separated from the importation trade: for a stop having been put to this last *direct*, the other must soon cease of itself, for they are not merely connected in a general way, but are dependent upon each other down to the lowest ramification. The country store-keeper is compelled to buy produce, or barter his goods for it in that part of the country where he dwells: for, unless the planter can sell his crops, he must go without his supplies. The wholesale dealers are on the same footing with the country stores, and the former, emanating from the North, naturally use their influence to send on produce for sale there, to increase the profits of their various concerns.

Let us endeavour then to support our Southern cities,* and not let them go down to mere "*landings*." Charleston, having the most convenient harbour, must be the emporium of the South, as New-York is of the North; but, Savannah, and other towns, ought to be kept up also, for nothing is more advantageous to the agriculturist, than the fair and honourable rivalry and competition of neighbouring places of trade.

J. G.

* See page 12 of our January Number.

ART. III.—*On the Cultivation and Preparation for Market of the Bengal Indigo; by* A. CAMPBELL DUNLOP, *of Sheldon, North Britain.*

[COMMUMICATED BY EX-GOVERNOR WILLIAMS, OF SOUTH-CAROLINA.]

To the EDITOR of the "SOUTHERN AGRICULTURIST."

"Factory, 23d Nov. 1828.

My Dear Sir,—Your application, under date of the 17th instant, was received in due course of mail, and I now inclose the memoir on the mode of manufacturing Indigo in Bengal. It was prepared for me by A. Campbell Dunlop, Esq. of North Britain, on board of a crowded steam-boat, on our passage to Baltimore. I have expected to see it for several numbers back of your work; as a friend, to whom I had given a copy, said he would communicate it to you for publication, with some additional matter of his own on the same subject, and which omission I regret, because his experience might have added value to your own labours.* Accident threw me into the society of Mr. Dunlop, than whom, I have not met a more gentlemanly and intelligent traveller. He had left his home, in very early life, in pursuit of wealth, and in Bengal found his hopes amply realized, in the cultivation of Indigo. His opinions, being those of a practical agriculturist, are entitled to implicit confidence. His assurances were frequent and most positive, that the use of lime, in the manufacture of Indigo, is injurious, and now entirely omitted in Bengal. During the last session of the Legislature, I gave several copies to different gentlemen; if any of them have made experiments on Mr. Dunlop's directions, it is extremely desirable they should put the public in possession of them. Colonel Glover, of the Senate, may probably give you further information.

Respectfully your's,

DAVID R. WILLIAMS.

* We hope the Gentleman here alluded to, will yet favour us with his promised observations.

Memoranda.

1st. The Seed is thrown in the land broadcast, very poorly cultivated, but grows luxuriantly, from the inundation of the land, yearly, from the rains. The land seldom gives two following good crops.

2d. The plant is cut when the leaves become dark green and full of juice—not particular about the height, say about five to six feet, and when the lower leaves begin to drop off. It is cut and put in the vats as soon as possible, so that it may not become heated and burnt, which will be the case if it remains heaped together for a short time.

3d. The steeping vats are generally about twenty feet square, and shallow, about three feet and a half high, so that the water may be filled quickly, to keep the plants from heating which are stacked slightly, to allow the water to penetrate freely, and to extract the colour. From ten to twelve hours steeping is considered sufficient to extract all the matter fit for good colour. This must be regulated according to the temperature of the weather, when—

4th. The water is drawn off into the beating vats, and is generally beat or churned off in three hours, more or less: having, in appearance, on a white plate, a fine large floating grain. When the grain begins to break, the beating should be discontinued and the grain allowed to settle in the vats, when the water should be gently drawn off. A light, Madeira-coloured water, generally gives good colour—sometimes a little greenish, which is not injurious. While churning, the water ought to become a fine light blue on the surface.

5th. The matter or fecula is pumped or run into boilers, and fire put to it until it comes to boil, when the froth subsides, which kills the raw vegetation, and makes it drain through the cloths quicker, by being run into vats, or tables, long and narrow, so that labourers may clean them without going into the table.

After all the water is drawn off, it is put into boxes or presses, the same as cheese, and pressed in screws until it is as hard as cheese is commonly pressed, so that it may be cut by wire on a table, and in appearance, no cracks or unevenness in the matter. It is generally cut into three inch squares all round. If the cakes then do not break clear and fair, they are broken up, put into the boiler, and reboiled, with the other fecula or matter of ensuing steeps.

6th. It is then put on shelves, overlaid with grass, so that as the cakes shrink up, the grass contracts itself, and keeps the cakes from cracking, without being much handled. When thoroughly dried, it is packed into chests, and no sweating. *No lime or alkaline used in the process.*

A. C. DUNLOP,
Of Sheldon Banks, N. Britain.

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Note, by the EDITOR.

We cannot too much impress upon the planters of South-Carolina and Georgia, the necessity of attention to the preparation of their crops for market. We advise all who cultivate Indigo to remark the observations made by Mr. Dunlop, "that if the cakes do not break clean and fair, they are broken up and reboiled with the next vat." That is, no pains are spared to make perfect Indigo; and as the Bengal Indigo stands the highest in price, it affords a good lesson to our planters. In the sale of Indigo, the perfect form of the cakes is of great importance, as the quality is tested altogether in commerce, by chipping off a small fragment at the *well formed* corners of the cakes. If the corners are much broken, or the Indigo cracked, it has the look of being imperfectly prepared, or *old*, and ill used; a purchaser will, in such case, reject it, unless tempted by a low price: for, it is supposed, by every merchant, that there must be some good reason for others, refusing to buy.

The difference between the Bengal method of making Indigo, and the old Georgia and Carolina mode, consists:—1st. In not using lime, or any other substance, to precipitate the colouring matter. 2d. In being boiled before the mud, as General Floyd terms it, is drained. 3d. In not making it go through any sweating process; the boiling preventing, we presume, any mould from appearing.

Dr. Cooper, of Columbia, has favoured us with some observations on Mr. Partridge's letter, page 7, and on the use of lime, by the planters, in making Indigo. His remarks, which will be found in the following letter, must bring conviction to the mind of every reader, that the use of lime, in the process of beating, is injurious to the quality of the dye. J. G.

"Columbia, S. C. March 10, 1829.

Sir,—I observe in your *Southern Agriculturist*, a letter from Mr. Partridge of New-York, containing a proposal for the dying of goods in the Indigo liquor after fermentation, and of a patent-right for that purpose, together with an exposition of the theory of the Indigo dye, which is unexceptionable.

I stated to Governor J. Taylor, in the summer of 1827, the same views of using the Indigo liquor, as a dye, without precipitating the Indigo; and I published in the *Telescope* the same explanation, in substance, as Mr. Partridge has given. In the same summer, after Governor Taylor had used his crop of Indigo, I procured some of the common weed, called the *Wild Indigo*, (Indigo Maron,) which Mr. H. Taylor was so good as to send me, and having fermented a few handfuls of it, I dyed with it the Cotton of which I send you a sample. As the experiment was only made to show that the Indigo liquor, as soon as it was drawn off from the fermented plant, might be at once so used, especially in the dying of blue Guineas, (Calicoes dyed blue, sent to the Coast of Guinea,) I took no further pains than merely to show it might be done. I published, at the same time, an analysis of East-India Indigo, Guatimala Indigo, and South-Carolina Indigo, to ascertain the respective quantities of colouring matter. On burning away, from a few grains of each sample, all that was combustible, I found, I think, in the East-India Indigo, one-third, or one-fourth, I forget now which, of earthy matter, that would not burn: and in the Carolina Indigo, two-thirds of the weight of the Indigo, of impurities, incombustible.

As the fæcula precipitates merely by its combination with the oxygen of the atmosphere, which renders it insoluble, and which is facilitated by the beetling, which exposes fresh surfaces of the liquor to the air, is lime necessary at all? It may occasion the Indigo weed to precipitate more speedily by adding weight to it, but it cannot but injure the quality of the precipitate. The French make Indigo from woad, and dye an excellent blue by woad alone.

I am, sir, your obedient servant,

THOMAS COOPER.

P. S.—Mr. Partridge, in describing the process of deoxyding the Indigo by means of sulphate of iron and lime, should have added the following precautions, seldom observed, because not commonly known to the dyers, who raise the blue dye for the calico printers.

If the sulphate of iron (green vitriol) be not fresh, green, well chrystalized, and free from yellow efflorescence, it is bad: for the iron, which forms the yellow efflorescence, is already oxyded, and cannot act on the Indigo. Therefore the fresher, and the more perfect the green colour and the chrystals, the better the article.

If the lime be old, and if it has by exposure, regained its carbonic acid, the iron will be precipitated, not as a protoxyd, but as a carbonet; and in this case, it will not act on the Indigo.*

The frequent necessity of renewing a lime vat, arises from want of this knowledge.

I wish Mr. Partridge may succeed in getting his quantity of Indigo plant, because he manifestly understands the use of it.

ART. IV.—*On Pinders, and Pinder Hay, (the Ground-Nut); by* A PLANTER.

I have cultivated the Ground-Nut for the last five years, the last two to some extent, and have found the cultivation and making Hay easy, the gathering, drying, and sorting the nuts very troublesome. I have too little experience in the culture and product to give any positive directions, therefore can only say what I have found tolerably successful. The most suitable land, is a very light and free soil, and the newer the better; such land as suits the Sweet Potatoe, suits them; they will produce well on any poor land. I have gathered thirty-five bushels to the acre, on land too poor for any thing else, and have been informed that more than fifty bushels have been gathered. The land is flush-ploughed, and harrowed level, and drilled with a small shovel plough, or Indigo drill, at two and a half or three

* Dr. Cooper here alludes to Mr. Partridge's process of dying, p. 8.—J. G.

feet. About the middle of March, or when you would plant early Corn, the Ground-Nuts, not shelled, are dropped by guess at a foot apart, and two together in the drill, and covered by the foot of the dropper. About five or six weeks after, when up well, the grass is scraped from them with the hoe, so as to clean a space of three inches on each side of the plant. A Freeborn plough, No. 0, or the smallest size, with two cuts, covers the grass effectually in the middle; the bar of the plough is towards the plant, and run as near as you can possibly go not to destroy it. The labourer does from three quarters, to an acre—the plough, from four, to five acres in the day; about three weeks after, a broad shallow shovel, cutting ten or twelve inches, is run once in the centre of the alleys, and the hoes draw the earth towards the plant, covering deep all small grass, and cutting out all large; at this operation the hoe does the same, the plough double the first operation—your third working is as the first, or as circumstances require. The culture should be flat, and the ground should be loose; the plant puts out roots at each joint, which bear the Nut very similar to the growth of the joint-grass, and hence the necessity of such culture, as keeps the limbs in the ground. I have no evidence that throwing dirt on the limbs would not be good. As it requires a long season to bear in, I leave the plants till I have reason to think a frost is near; a hand then pulls up each plant by the root, and turns it upside down to dry; if you have the time at this season, to gather the Nuts, then pull the plants up slow, because more of the Nuts come out of the ground with them; but if not, and you only have time for Hay, pull fast, and the Nuts are left in the ground. The Hay is left on the ground two or three days, according to the weather, and is then ready to be put away as fodder. A smart hand will pull and turn an acre a day. I think the produce three or four times greater in weight than the blades that would have grown on the same land; it makes a rich and strong Hay, preferred by horses, mules, and cattle, to either Blades or Crab-grass Hay, and it keeps as long. I have been using it a long time, and am now, and have never known it to disagree with any animal. The gathering the Ground-Nuts is a tedious and troublesome operation, from two bushels to a half of it is the task per day, from the best to the worst hands; they are gathered often by the harrow, which bring them to the surface, or may

be gathered by the hoe alone; they are washed, and spread thin on the ground, and dried for four, five, or six days—the cotton-scaffold would do better, if unoccupied with Cotton; they are housed, sorted, and all the false Nuts taken out before they are fit for market—this may be done on wet days. They are so troublesome that they will not be gathered long for a less price than a dollar a bushel. Their cultivation is very easy, and their chief value is for hogs. Nothing more than for seed should be gathered. I do not know how to estimate their value in comparison with Corn; not so valuable per bushel, though certainly more so per acre; I can truly say, they are very valuable indeed, and your hogs may be killed from the field, and will make bacon that will not drip more than from corn-fed hogs. I have long thought it an object with gentlemen on the light lands of the sea-board, as one that would keep their hogs cheaply at home, and furnish them with abundance of good fodder.

If you think the above worthy a place in your useful paper, it is at your disposal.

A PLANTER.

P. S.—In your December number, page 531, near the top, you make me say, that the latitude of Virginia is better for Corn than *Rice*, a truism I would scarce think it necessary to state; please strike out Rice, and insert "*here*." I meant by the remark, to show that Corn would not bear thick planting.

ART. V.—*On Raising Plantation Horses.*

OBSERVATIONS BY THE EDITOR.

A much esteemed correspondent has sent us, at our particular request, the following account of his mode of raising plantation horses.

Our readers in the lower country, cannot fail to take an interest in it, for it points out a way by which almost every planter may be supplied with one of the greatest *comforts*

in the country—an abundance of working horses, as well as of others, for the innumerable purposes they are hourly wanted. But it will be especially valuable, by removing the powerful obstacles to the use of the plough, on many places along the sea-coast.

In using the word *comfort*, we do not allude to it in its idle, *personal* sense, but in its agricultural, profitable meaning, which implies the promotion of all the objects of agricultural economy and profit; in forwarding by the *abundant* supply of well-regulated animal power always at hand, the great business of planting or farming.

The Southern States have the advantage over the Northern in the greater relative value of their produce. The Northern, far exceed us in the actual produce of land, cultivated by any given number of labourers; and this, altogether, from the greater use of animal power in their system of cultivation. In the South, on the sea-coast, horses are much abused when left on plantations for the summer, and those raised where they are well brought up, are generally *worn out*, in a year or two, as it is supposed. The fact however, is, that the care taken of them is so different from what they were formerly accustomed to, that they perish from the change of fare, climate, and treatment.

If the plan of our judicious correspondent were adopted on every plantation to the extent of its means, in the same way as cattle are raised, the market crops of the lower Southern country, would soon be more than doubled. The provision crops especially, could be increased four or five fold, by the universal aid of the plough, the harrow, and the cart.

We cannot say more in favour of this plan, than by repeating the words of our correspondent—words that ought to save thousands to the Southern States—"that horses raised in this way, give no trouble, are never fed, are brought up every night along with the cattle, with whom they herd, and go into the same pen. While, in the winter, all the males, including the stud, are at work in the rice-machine, and in spring and summer, are employed in the plough and cart." J. G.

—

"Charleston, March 6, 1829.

Dear Sir,—On my return from the country, I found your note, requesting information respecting the little breed

of horses I have upon my plantation. (The box of cuttings of the Mulberry, and the roots of the Rose, raised from seed, I thank you for, as I have been long wanting them.) In answer to the information wanted, respecting the horses, I have to say, that about twenty odd years ago, I commenced raising them, and purchased a very small mare from a negro. She was then with foal, which foal is still alive, and does little jobs about the plantation, carting straw, manures, hoops for the coopers; being so very old, she must be indulged. I have a great many running at large, in and about the plantation, they are very domestic, never go far from home, and are always loitering about the plantation, and in the broad-road, *give no trouble, are never fed*, and no further notice taken of them, than to bring them up every night along with the cattle, with whom they herd, *and go into the same pen.* The little mare, from which they all sprung, was, for a time, my riding-horse in the fields, and was accustomed to the banks. She annually became with foal by a little Cherokee stud in the neighbourhood. As soon as one of them became old enough to cover, he was reserved for that purpose; the other horse colts were regularly altered, and turned in to work at the machine and plough. The mares were allowed to run at large, and almost the whole of them have never had a saddle or a bridle upon them. The stud and geldings work together through the winter months. In the month of March, the operations of the mill ceasing, the stud is discharged, and allowed to gang with the mares, until the winter; the other working horses are employed at the plough and carting. They give no trouble, and seldom or never are found in my fields after planting. Every year I break and put to work three or four. The attention of travellers is attracted by the gang of small horses, sauntering and loitering about my front gate. Frequent applications have been made to me to sell, but I have always refused, as I found use for them all. An offer has often been made to take half a dozen at forty dollars, and fifty dollars round. I found them a very increasing, profitable, and *harmless stock.*

I hope the information will be satisfactory, and if you think that it would be serviceable in the form of an item in the *Southern Agriculturist*, you are perfectly at liberty to make it so. Very truly yours,

S. A. S.

ART. VI.—*On Agricultural Prejudices; by* GEORGE J. F. CLARK.

(Continued from page 72.)

ART. 6.—We make many mistakes in agriculture, as well as in all other affairs, by a passive adoption of other men's practice, under the erroneous impression, that the course pursued by many must be the best; or, because some one, in whom we more immediately confide, has continued a particular method, it must be evidence of its superiority; and should he happen to be of scientific repute, of course he must be right. We take up his method and follow it, without once reflecting, that he may not have tried another; that he may be prejudiced; may be a theorist; that, like the most of us, he is the offspring of habit, the mere reflector of mental or practical education; that he may not have had the abilities or industry of inquiring beyond the surface, nor strength of mind to throw off the yoke of early impressions.

And the scientific agriculturist, it too often happens, is so much wrapt up in methods and measures, that he cannot move without them. He makes them for all things as he goes; and as conclusive, in his opinion, as his multiplication-table; although he daily meets such varieties, and such mysteries, in nature's ways, as should convince him, we shall never adapt measures or guages to fit them. He tells us, for example, that the bud or scion of a nut-bearing tree must be ingrafted in a nut-bearing tree: and so on with those that bear seeds, or stones; as apart from this rule nothing will do. Whence had he his information—from experience? No; he has a shorter course—analogy. For instance, these two trees, from their similarity in seed, will do to unite; and by the same measure, as all good measures must work both ways, those other two, being dissimilar, will not. So he goes no farther, but gives as a fact, what he had only from presumption; while the gardener, not wedded to theories, nor tied like musicians to measure, or merchants to calculations, finds that fruit trees may be ingrafted on a cabbage-stalk. And, that where care is most necessary, is in chosing out a stock sufficient in strength, duration, &c. to support the ingraft.

He will tell you, too, that trees must be pruned a little now, and a little more by and by, that they may not "bleed" too much at once; that the wound must be cut very smooth to let the bark grow over it; a saw-cut will not do without being trimmed over with a very sharp tool; and the wound must be plastered to keep it from the weather. Why from the weather—is there any danger from spasms? Plaster cannot keep the stump from rotting down to the next fork, or to young shoots that most frequently put out nearer, and intercept the progress of decay. And as to the bark, it never grows over a stump; the rot of the stump, progressing down to the next limb, is arrested at the fork; and there, by the increased growth of that limb, consequent on the amputation of the other, and the stump having ceased to grow from want of direct foliage, it is crowded over to one side, where it gradually disappears as a lateral wound. But more frequently, the progression down of the rot is intercepted by the putting out of one or a group of young limbs on one side; and then the same results takes place there, of casting the healing of the wound to a side process. Should limbs be divided on two opposite sides of the stump, then, probably, the case is divided and healed, as though it had originally been too distinct side wounds. And should limbs surround the stump, it disappears, rotted and absorped in the middle, leaving a triple or quadruple fork. This is nature's general process; and no plaster whatever will alter it, or keep the wood sound.

With respect to the mere weeping, or as some dignify it, *bleeding* of trees by pruning, I feel convinced that there is too much importance attached to it. A large Grape-vine will, in summer, run off a pint or two of water; but that does not deprive it of the power of pumping up as much more, when wanted; and though cut in winter, when it weeps none, yet the pores cut across continue open, and will not weep the less as soon as the weather is warm enough to permit the assent of water into the vine.

For my part, I have always found the best mode of practice to consist in liberally cutting away—decently, to-be-sure, as to the act; and with attention to the shape of the tree;—no matter about bleeding, polished wounds, or plasters. Keep their barks clean: and this they will do themselves when healthy; give them room and free circulasion of air. Cultivate among them, or lightly, and fre-

quently, break up the surface of the ground up to their bodies, in order to destroy weeds and vermin, and leave free access for atmospheric air to their roots. These keep them healthy and vigorous, and leave the rest to nature.

By the bye, although I conceive plastering to be altogether useless when plants are rooted, yet, when setting out cuttings of all kinds to root, that are cut off above and below, I dip the head of each, about half an inch, into scalding pitch, and immediately after into dry sand, in order to stop the pores above. This has a fine effect in their quickly and strongly sprouting, and retaining their sprouts in dry weather, as it prevents evaporation from above, and, on the principle of the syphon, escape from below.

ART. 7.—A very conspicuous writer—as, of course, he must be when the British Cyclopœdia quotes so largely from his works on agriculture,—tells us, that in making a compost for ingrafting fruit trees, the manure, one of its ingredients, must be that of a stud-horse. Now, when we find a man of his standing, still hanging on to these petty remnants of the superstition of former days, we necessarily question much of his experience: at least it has this effect on me. A tiger, living on flesh—a cow, on grass—a hog, on both; I can easily conceive a difference in the strength of a given quantity of their manure; but not even then any difference in their virtues.

ART. 8.—In making Asparagus beds, it is a frequent practice to lay a foundation of stone, or other hard materials, below the plants, and I have heard of floorings of plank being used, to prevent the manure—some say the roots, others the sprouts, from going down. With respect to the manure, it never descends, unless by some fortuitous circumstance it is carried down, and then it reascends in gases the most enriching to the plants at the surface. A body of either animal or vegetable putrefaction, buried beyond the reach of plants, marks, for years, its locality in the superior growth of all vegetation above it. The roots, it is quite unnecessary to guard them, for nature will take care that they do not descend farther than suits her purposes. And as to the sprouts, we could not, with all our ingenuity, turn them down.

Cucumber beds, too, are often paved with pebbles, for the purpose of keeping them cool; as though these plants did not, as well as all others, require the warmth of the season in which they grow. But was cooling advantageous, it would not be effected by this means, for the stones will necessarily partake of the temperature of the surrounding soil. What then is the object pursued—to continue through the greater heat of summer this desirable vegetable, that succeeds well only in its early stage? Even then it would be in vain to keep cool the roots below the ground, while their foliage is overpowered by heat above.

ART. 9.—Very many of us condemn the watering of plants in the forenoon in summer, and afternoon in winter, in the belief that it injures in the former by an increase of heat, in the latter by an increase of cold. Both these positions are founded in error; and not error arising from the obtuseness of the subject, but a want of observation—a prejudgment. Every plant must contain moisture to be alive; and the earth about them must contain moisture, or they could not live; if, then, this moisture, standing open to the direct rays of the sun, does not rise in heat above the surrounding temperature, how is the water we add to do so? Water does not increase in heat, nor become more susceptible of heat, merely by its increase in quantity; nor does the sun increase the intensity of its rays, because we augmented the quantity of water. Moreover, plants that suit the season, rarely, if ever, die by the intensity of either cold or heat; but by the exhaustion of water, brought on by the more rapid evaporation consequent on the excess of either. Therefore, whenever we water them, under such circumstances, we not only remove drought, their greatest enemy, but we refresh and invigorate their growth.

I grant, that watering in the evening in summer, and in moderate winter weather, is the best time of the day, because the lesser evaporation of night allows the water to continue longer about the plants; but watering, at the hotest time of the day, so far from injuring, will always benefit them.—Watering in the morning, in severe winter weather, is preferable, inasmuch as the frost of night paralizes the good the water would communicate; but there is no time that plants want water so much as immediately after the thawing of a frost, on account of the very increased evaporation that succeeds.

Another argument in favour of early morning and early evening watering of plants is, that this supply arrives at their meal hours: for however plants, like animals, may take a relish after an occasional disturbance, I believe that the Great God of Nature, in his wonderful dispositions, has alike, assigned them meal hours; and not only meal hours, but a period of the day for recreation (perhaps too for labour: shooting and bedding their roots, &c.) and an other of the night for sleep. We will find exceptions, for there are vegetable, as well as animal bats and owls.

In our Corn fields, more particularly, there occurs an evil we designate by the several terms of *firing*, *scalding*, *burning* of the Corn. This commonly shows itself shortly after showers, preceded by dry weather. Many planters attribute this to the increase of heat occasioned by the fall of rain on the warm sand. Though I much admire this fine idea—"The wisdom of man is worse than folly, when applied to things beyond his comprehension,"—I will venture to oppose that opinion by another, which is, that the thirsty Corn drank too large a quantity at once: the strongest of animals, not excepting the rational, are sickened, and even killed, by the same cause.

Another error connected with watering is, that its frequency injures or destroys plants, by rotting their roots, blistering their bark, or boiling their leaves. This is quite a mistake. Yes, if we place a plant, young or old, in a situation that confines the water about its foliage, or roots, then, indeed, it sickens after a while, and if the confinement continues, it certainly dies; for vegetables can no more bear stagnant water, than animals stagnant air. They do not suffer in so short a time, but the cause continued is not less fatal. But while ever water is passing by their limbs and leaves, as in the descent of rain or other irrigation, or by the roots in filtering; with intervals in the former for respiration and sun-shine; and in the latter for access of atmospheric air, they can scarcely get too much of it.

With great respect, your obedient servant,

GEORGE J. F. CLARKE.

ART. VII.—*On the Cultivation of Corn amongst Long Staple or Sea-Island Cotton; by* S.

Mr. Editor,—For several years Corn has been sown amongst the Long-Staple Cotton. The cause of this mode of culture, was the scarcity of land cleared, and the observation of here and there a stalk of Corn, which had matured without any perceptible difference in the product of the Cotton adjoining.

The first experiment was at twelve feet apart, and on every other bed, then twelve feet on every bed, and for the last two years at ten feet on every bed, single stalks—in some few instances two were left, and still no difference in the appearance of the Cotton, but believing that single stalks produce generally larger and finer ears, and also wishing to increase, if possible, the number on each, the single stalk culture was adopted; particular attention was also paid to the selection of seed Corn, and from the usual number, they have been increased to three, four and five, and, in some instances, to six ears, and though not so large as single ears, their product is much more, and of equally good Corn: during the late dry seasons, particularly the early part of 1826, it never suffered by drought, when that by itself almost entirely failed, and I will further state, that in no one instance, has Corn amongst Cotton ever suffered by drought. I have mentioned there is no evident difference in the product of the Cotton, consequently the Corn is a clear gain, but the exact quantity to the acre has never been fairly tested.

The mode of planting is as follows:—When preparing for the Cotton crop, and as soon as a field is listed, three hands, one fellow and two elderly hands, are left to sow the Corn; the fellow is provided with stakes of ten feet each, which he ranges across the field, and turns them as he progresses, he marks, one drops, and the other covers the seed—but in the event of being pressed for time, two will do, one to hole and the other to sow and cover with the foot. The Corn being thus early put into the ground, will soon be high enough to bear the ridging for the Cotton, should it not, care must be taken to avoid covering the places. After this, the culture of Cotton makes the crop of Corn, which being often worked, shoots ahead, and in July, the

blades are taken off, and soon after turned down, at that period of the year when the Cotton requires the sun most to fill and mature the fruit, and as each stalk of Corn can then be considered only as so many stakes, cannot possibly injure by shading. The crop of Corn can also be taken off, before the heavy picking of Cotton comes, but should it be necessary to leave it in the field till the Cotton is secured, no great injury will accrue, and the loss of course very trifling. One year, my crop of Corn, from the above cause, remained in the field till the last of December.

I have omitted to mention, that in 1826, some of the Corn was injured, after being turned down, arising from the heavy and continued rain, the greatest injury being amongst the most luxuriant Cotton, by which it was completely covered; it was also supposed to have been increased by the Corn being turned down rather too soon.

In this mode of culture, there are many advantages and disadvantages; the former have been partially pointed out, whilst the latter have not, some of which are an increased number of bird minders, and in the fall of the year, of field minders, also the great extension of the crop, and consequent labour in harvesting, yet I cannot say more Corn is stolen or injured than in the field of my neighbours.

I have attempted the account of the culture of Corn amongst Cotton, and though very imperfect, hope it may be the means of inducing others, who can pay more attention, to give it a trial. I know many are opposed to it, but I am so well convinced of its advantages, that I shall continue the culture. I remain yours,

S.

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Note, by the EDITOR.

In our late tour, we observed many fields of green-seed Cotton, which had Corn planted at intervals of about ten feet on the beds, one stalk left in each hill. We did not observe any difference in the appearance of the Cotton.

J. D. L.

Art. VIII.—*On Saving Pea Vines.*

The following mode of curing and preserving the common-field or Cow Pea, has been successfully practised, and is recommended to those who place a value upon forage.

As soon as the Peas are fully ripe, the vines are chopped off, or pulled up by the roots, and immediately carried in bundles, or carted to the pens, in which they are to be put up. The pens are to be made of fence-rails, four square, and constructed as follows:—Upon the second or third course of rails, so as to raise it about eight inches from the ground, a floor is made of the same materials, the rails being placed about two inches asunder. The sides are then carried up four or five rails, and the pen filled with vines; over them is placed a floor of rails as above, and the sides again carried up, and the space filled in, and floored, until the pen is raised as high as may be deemed expedient, when it is covered with boards, a slant being given, by raising one side higher than the others.

Thus put up, each layer is pressed down only by its own weight, which, with the diminution of bulk from evaporation, admits a space of air between the floor above, and the vines beneath, and the cubic mass is in contact with the atmosphere on every side. The process of drying is therefore rapid and complete. When opened for winter use, the whole will be found sound and good.

This mode of curing Pea Vines, is not recommended to any one who will not give back the animal manure obtained from feeding on them, or an equivalent, to the ground from which the crop is taken.

PISUM.

Savannah, Feb. 21, 1829.

Art. IX.—*On Raising Sheep; by* J. G. Anson.

Dear Sir,—The publication of your journal has excited a spirit of inquiry among the agriculturists, and they begin to interchange opinions, establish theories, institute experi-

ments, and deduce practical inferences, which are likely to produce the most beneficial results on the interest of the Southern planters; many subjects have been there discussed and made public, that otherwise would have been lost to the public, if no such channel invited the intelligent and experienced agriculturist to communicate his experiments for the benefit of his brother planters: the circumstances and capacities of some planters, afford greater facilities for making and communicating experiments, than what fall to others; let such be liberal in giving information to their less fortunate brothers.

I am, sir, a young planter of Anson County, N. C. and have had the management of a farm of my own for eight years, during which time I have kept a small flock of Sheep; they have increased annually about fifty per cent. and nearly in the same ratio have they been sacrificed by the dogs: as I have never made my flock a primary object, particular attention has not been bestowed on them. But intending for the future to make them such, I want information on the subject; in order to obtain it, I shall propound a few queries for the *Southern Agriculturist*,—the legitimate channel for such information.

1st. What are the most effectual means of protecting a flock from ravenous dogs: (the terror of all owners of flocks!) when the flock is too small to justify the expense of a shepherd.

2d. Is the health of a flock injured by penning the nights in summer for too long a time in the same pen? if so, state what length of time a flock can remain in the same pen, without endangering its health, allowing the eighth of an acre for fifty head, and a proportionable sized pen for a larger number.

3d. Is it an advantage to house a flock during the winter nights, or only in very cold or wet weather?

4th. What is the natural average life of a flock, and to what age will it yield a full fleece, and continue prolific—which will fail first, the ewes or rams—how often should the old rams be displaced, and young ones supplied—and how many ewes to each ram?

5th. Is it instinctive in the shepherd's dog to attend and guard the flock, or does it only possess a docility susceptible of education, and requires to be trained—can he be procured in America, or in what other place—are they plenty

or scarce, are they costly, or can they be had cheap, and at what price?

6th. What number of Sheep can one shepherd attend throughout the grazing season, assisted by his dog?

7th. Has any of the Bakewell sheep been introduced into the Carolinas—if they have, how long since, and what is the prospect of their succeeding—and what other distinct breeds, or judicious crosses are in the Carolinas?

J. G. ANSON.

P. S.—While I am soliciting information from others, it may be thought incumbent on me, to cast an atom into the general scale, for the benefit of others; let the following evince my willingness to do so.

It is all-important in some particulars in domestic manufactures, to have Wool that is perfectly white, all persons desiring such, must have their Wool washed entirely free from yolk, in clear, cold water, as soon as it is shorn from the sheep; but if it is not done until the yolk dries on it, it will give it a yellow tinge, which will be difficult to remove. When washed as above directed, no soap is required, the yolk acting as a sufficient detergent; no soap should ever be used on Wool before spinning, as it has a tendency to dry the fibre, and render it harsh and bad to work: this is one cause so much oil is required in manufacturing Wool; too much exposure to sun and air has the same effect. If this morsel should be acceptable, I shall, probably, at some convenient time, furnish you such others as I may have.

J. G. ANSON.

March 10, 1829.

Note, by the EDITOR.

The Sheep is one of the resources of every agricultural country, and is highly deserving the attention of the Southern planter, as not only affording much comfort to his family, by the supplies of excellent meat from the flock, but in countries *having well regulated markets*, considerable profit from the butcher, as well as from wool.

Sheep are so easily raised with us, are subject to so few of the disorders of other climates, require so little attendance

and food, that no plantation ought to be without a flock, particularly when it is known that the wool can be easily and profitably bartered for cloth of any description wanted in a family, from the coarsest woollen for field negroes, to superfine cloth suited to the planter himself. This gentle animal can be, however, with difficulty, protected from sheep-stealers, in the present state of our market regulations, nor will any laws, without the aid of the public cattle market, be of service to the planters. As we intended to have brought the subject to the early notice of our readers, we therefore gladly embrace the opportunity our North-Carolina correspondent has given us of making a few remarks in reply to his queries, without absolutely adhering to the order he lays down.

In a late excellent work on agriculture, we find the following observations on *breeding*,* which, as it did to us, will, we suspect to most of our readers, throw a new light on the subject of high-priced plantation stock :

"There does not exist a more mistaken notion than that the stock of our farm may be kept equal to every other, by crossing and changing the animals and *seeds* only. It has been well observed, that 'nature provides every creature with a shelter from the storm.' If a male and female of any animal or plant be bred under circumstances of a congenial climate and a liberal supply of food, and afterwards placed in a situation where the climate is harsh, and the supply of food scanty, they must of necessity decline in flesh, and in health and vigour: but their young, bred under those circumstances of privation, will acquire habits, and be reduced to a size more conformable; and these again breeding in and in, the habits of their progeny, will still become better adapted, until, by degrees, they will become perfectly inured and naturalized, and capable of making the utmost return the farm is equal to, and at the least expense. But if, on the other hand, the breeder chooses to contend with, and expose nature, and instead of submitting to her laws, he still persists in attempting to keep up the size, by a fresh supply of males and females from the original quarter, he inevitably must be subjected to the

* We shall follow this subject up in some future number.

consequences of want of health and vigour, and incur great hazard, and extra expense."—*Heyward on the Science of Agriculture*, p. 36.

"It must be admitted, that more valuable animals in themselves, never were produced, than those bred by Bakewell; but the old maxim no doubt is good, 'you may purchase gold too dear.' However, Bakewell had an object in view, and to obtain this, every advantage of artificial climate, food, and lodging, were resorted to, regardless of expense; and so long as he could furnish exuberance in food, climate, and lodging, he found an exuberance in the flesh and size of his animals returned; but when his means of increase were exhausted, nature made a stand, *she* never went '*farther than she intended.*'"—*Ib.* p. 26.

"In breeding animals for fattening, it is the usual practice to select those for breeders, that discover the greatest propensity to fatten or grow fleshy, and such animals are *generally uncertain and bad breeders*, and *always bad nurses;* and this rests on the principal I have stated. The female being selected, as one in whom the exuberance of nature is in her flesh, and whose food is appropriated entirely to the increase of this, her powers of conception are obstructed, and her young, neither during her pregnancy, nor after their birth, can be furnished by her with the nourishment necessary to support them; and sterility in the female, and disorder, and want of size and strength in her progeny, must be the result. But after their birth, the wants of nature in food and temperature, may be artificially supplied to the young, and they may thus be reared, with all the apparent qualities of their progenitors.

"I obtained a sow-pig, of a breed peculiar for their propensity to fatten, from Mr. Hodgson. This creature kept in high condition, even when fed on grass alone, or simple wash and grains; but she never produced more than seven young ones at a farrow, and two or three of those were generally starved to death for want of her producing milk, all her food being appropriated to the increase of her own flesh, instead of furnishing sustenance for her young ones; and whatever boar was put to her, made no difference in this respect, but I never obtained any young ones, that possessed in an equal degree her own propensities and shape, except when put to her own son. I also obtained another sow, of a very different breed, but of equal pro-

pensities to fatten, and valuable proportions, and although this animal was regularly in season for more than twelve months, and put to different boars, she never would breed. Such a sort of pigs would certainly not answer to keep as *breeders* of stock for a market, but to *purchase* for fattening, they were worth twenty-five per cent. more than any others I ever possessed."—*Ib.* p. 30.

This we think is the best reply we can make on the subject of crossing.

In reply to our Correspondent's first query, we would say, that in order to place a flock of Sheep in safety, the first step is to get rid of all *negro* and other useless dogs. Fox hounds, we have heard, are most dangerous for Sheep, but *every dog* that can be spared ought to be killed. If the others, *being well fed*, continue troublesome, but yet are too valuable to be killed, they may possibly be cured by chaining one at a time to the stoutest ram for an hour or two. The punishment inflicted is generally a severe one, and it is necessary to set a watch over the ram to prevent the dog being killed. If this method does not succeed, nothing but the halter or buck-shot will prove a corrective.

Sheep are not hurt by penning on the same spot, if the enclosure is large enough for them to move about freely. Where danger is to be apprehended from dogs, the sheep pen ought to be secured against the possibility of their getting access. And as manure to a young planter will be desirable, he will find with good management, that he can collect it in considerable quantities in his sheep-pen, by bedding with straw, corn-stalks, leaves, or any other vegetable substance.

Great advantages are derived from a *permanent pen*, besides saving the manure. The Sheep, after a little practice return of themselves regularly to the fold at sunset. If the flock is a small one, and the neighbourhood is not a bad one, they require only to be turned out in the morning, and will of themselves return. But in case of danger from thieves, a small pasture near the dwelling house, or a small field is sufficient to support them, and the closer it is fed down the better, for *they cannot thrive amongst long grass.*

It is not absolutely necessary to keep Sheep under cover, even in the severest weather. But as they suffer much

from drenching rains, particularly when they drop their lambs, we think a shed ought always to be provided for them in the pen which serves as part of the enclosure.

Bordley has answered our young farmer's fourth query fully, and we therefore quote from that excellent work:

"It is necessary to observe the ages of Sheep: and some age ought to be fixed on by the farmer, beyond which nothing but great excellence in them as breeders should induce him to keep them. At shearing time, the mouth of every Sheep and lamb is to be inspected; and the lambs having blackish gums, or that are not straight, well made, and promising, are marked for sale: as also are the aged rams, ewes, and wethers. Whatever is the age fixed on, for clearing the flock of old Sheep, as many lambs, the best are to be turned out for breeders, and for muttons, proportioned as there are meant to be aged sheep disposed of; and few more for supplying losses whilst they are growing up. The idea of four or five years old, was long retained from the practice of keeping muttons of the old rat-tail breed to those ages, for obtaining the best flavoured meat. But I prefer two or three years of age, for the new breeds in America.

"The farmer will first fix on the number of grown Sheep to be kept by him; then on the age he means to observe for disposing of them; for he is to have none in his flock that are not in *full vigour*. Dividing the whole number in the whole flock, by the age at which he means to dispose of them, directs to the number of lambs he is to turn out, as a supply for the same number of old Sheep to be disposed of from the old stock; and a few more lambs may be turned out with the stocked lambs, for making good any losses. If two years are fixed on, for the full age, and there are 100 Sheep, the two's in a hundred being 50 times, direct to the disposing of 50 aged Sheep, and to the turning out 50 *(more by* 4 *or* 5*;)* in all 55 lambs. But the ewes are to be 4 years old. Then the fours in 60 ewes are 15 ewes to sell; and the two's in 40 wethers (together 100 Sheep) are 20 wethers to sell. In all sell off 35 old Sheep; and turn out 35 *(more by* 5*,)* are 40 lambs to be raised. After 5 or 6 years of age, Sheep decline in figure and wool. Brambles are charged by common farmers with taking off all the wool that Sheep appear to have lost, but when Sheep decline in vigour and good plight, they decline

in the quantity of their wool, and look mean, even in pastures clear of brambles; 20 or at most 25 ewes allowed to one ram."—*Bordley's Husbandry.*

We cannot reply to the fifth and sixth queries further than by saying, that we believe very little in instinct, and think that an intelligent dog can be educated to any purpose required of it; we will subjoin a few directions for the care of Sheep, which we have found useful in attending to the small flock we have always kept.

The ram lambs are altered at from three to five weeks old; the consequence of which is, that none are lost. The *ewe lambs* have their tails cut off at that time to two inches in length, by which means they are easily distinguished from the wethers ever after. If the planter chooses to put his ear mark on the whole, this is the time for the operation. In Spain, the large and valuable flocks are branded on the nose with a delicate hot iron letter, which never can be effaced. The earliest and best ewes ought always to be kept for breed, and never killed for the table.

Sheep ought to be fed in South-Carolina from the time the fields are picked bare (if they are allowed to enter them) in the fall, until the grass is well up in the spring. If a sufficient winter pasture of green oats, rye, or barley is provided, this is not necessary. They are not delicate in their choice of food, but thrive in proportion to its quality. rice-flour nubbins, or dirty corn-grist, potatoes or peas in the haulm, dry oats, or other small grain, are favourite fare with them, and we have seen superior mutton fattened on the Irish potatoe.

In families in Carolina, where there are many servants, the burs ought to be picked out, and the wool washed, as our correspondent very judiciously recommends. The most simple way of effecting this is in the common round *oak* baskets with *the feet à l'Ecossaisse.*

To those, who, like ourselves, have never been able to get the value of the wool in Charleston, we would recommend to ship it to Messrs. Du Pont, of New-Castle, Delaware, in exchange for such cloth as may be wanted. These gentlemen, who are well known in Carolina, will give a full price for any wool sent them, according to its quality. They will likewise send back any quality of cloth ordered, to the value of the wool, and this we have found by much the most profitable way of disposing of it.

Our book is a dish of all sorts, and provided the ingredients our correspondents throw into it have a smack of agriculture in them, or act beneficially on it or its followers, they will always be well received. We therefore thank the young planter of Anson County, North-Carolina, for the contribution with which he terminates his letter, and wish him much success with his flock of Sheep. We are satisfied it can be made highly profitable, and his ewes, if in health, will each give him one lamb, and many of them two, in a year, but he must guard them against two legged as well as four legged depredators, for we have always found these last the most fatal. J. G.

ART. X.—*On Improving Poor Lands; by* A SUBSCRIBER.

Mr. Editor,—In your March number, a Correspondent inquires for a process of improving poor lands without expensive manuring. You very properly recommend the common Red, or Cow Pea. In confirmation, I would refer him to a well written paper on the subject, by Colonel Thomas Pinckney, published in the *American Farmer*, a few years ago. Instead of cutting the vines for fodder, I would recommend that the crop be ploughed in about the latter end of May, or first of June, and another crop, either of Peas or Potatoe-slips immediately planted on the same ground; the leaves and vines of either, covered over in the fall, would add greatly to the strength of the land, and you might have even a third crop from it by sowing Rye or Oats for winter pasture. A flock of Sheep grazing on it, would probably add still further to its improvement, and a fourth crop in the two years may be had, after mowing the winter grain by again planting either Peas or Potatoe-slips.

Further information is requested on the tillage for ameliorating land, from some Correspondent in the neighbourhood of Black Swamp, near Savannah river It is understood that the inhabitants of that neighbourhood are very successful in a plan said to have been introduced by Dr. Henry Richardson fifteen or twenty years ago. I do not know the particulars, but am informed that they cultivate a field two or three years in succession, but not so long as to exhaust it. They then throw it out, while it is, as they express themselves, "still in good heart." In the spring it becomes covered with Dog-fennel; while this is soft and succulent, probably when they finish ploughing the crop, they turn it under with the plough, but whether this ploughing is repeated in the year, or whether the process is continued several years in succession, I never learned. A SUBSCRIBER.

PART II.

SELECTIONS.

ART. I.—*On the Properties and Application of Manures.*

[FROM LORAIN'S HUSBANDRY.]

(Concluded from page 186.)

Agriculture is greatly indebted to Sir Humphrey Davy. For although his experiments on farm yard manure determine nothing more, than our eyes and nose might have long since done, still his great chemical talents will powerfully enforce a more rational use of this highly important article.

However, as things which he has recommended respecting it, do not appear to accord with nature and reason, harmonized in the practice of husbandry, they should be controverted; especially as Sir H. quotes the celebrated A. Young to show, that practice accords with his theory; and Judge Peters says, that "Mr. Young's dung is not the straw and unfermented mass, applied by hot and fresh muck farmers."

If my memory be correct, Mr. Young formerly considered the dung under his sheds, which was in a high state of fermentation, much better than that in his yard which had not fermented. If so, his candour in the present instance is worthy of imitation. In a lecture read some time ago before the British Board of Agriculture, he asserts, that "were the practice of using fresh dung general, it would add above twenty millions sterling to the produce of the kingdom"

Among other proofs to support this assertion, he introduces the practice of Mr. Ducket, a very intelligent but plain practical farmer; and in doing this, says, "Dependent on the trench plough, is Mr. Ducket's system of dunging; he conceives, and I apprehend very justly, that the more dunghills are stirred, and turned over, and rotted, the more of their virtue is lost. It is not a question of straw merely wetted, but good long dung. Without the trench ploughing, however, his opinion would be different."

Trench ploughing is certainly by far the best practice where the soil is rich and deep, or manure is very plentifully applied. When, however, the soil is thin, and manure scanty, trench ploughing is very injurious, both to the crop and the soil, as will be hereafter explained.

But as little trench ploughing is done in this country, practice determines that fresh, long dung well turned under, from five to six inches deep, is equally efficacious in proportion to the soil, depth of ploughing, and manure; provided the crop be properly cultivated.

There is no standard to determine exactly what good fresh long dung is: but as Mr. Ducket is a good farmer, there can be no doubt, but, like every other farmer of the same description, he carefully gathers and uses all the litter his farm will afford: therefore, his long fresh manure must be much the same as has been recommended by those whom Mr. Peters calls "hot and fresh muck farmers." But what he means by "the straw and unfermented *mass*" applied by "hot and fresh muck farmers," is certainly beyond my comprehension.

If the word "*mass*" be meant to include more straw or other litter than is commonly used on a well ordered farm, they would be more justly termed "cold and fresh muck farmers." If this word be intended to include dung from the cattle in the quantities generally used by those whom he calls "hot and fresh muck farmers," the manure would be much the same as that used by Mr. Ducket, or any other good farmer, who applies his dung before it has been wasted by fermentation. However, leaving this enigma to be better explained by the President, I will proceed.

Sir H. Davy says, "a light incipient fermentation is undoubtedly of use in the dunghill, for by means of it a disposition is brought on in the woody fibre to decay and dissolve when it is ploughed under the soil."

I have before shown, that practice and observation clearly determine, that nature is not deficient in the process of fermentation and decomposition; and Sir Humphrey says himself, "When straw is made to ferment, it becomes a more manageable manure, but there is likewise, on the whole, a great loss of nutritive matter. More manure is perhaps applied, for a single crop; but the land is less improved than it would be, supposing the whole vegetable matter could be finely divided and mixed with the soil.

"It is usual to carry straw, that cannot be employed, to the dung-hill to ferment and decompose; but it is worth experiment, whether it may not be more economically applied when chopped small and kept dry till it is ploughed in for the use of the crop."

Now if so much labour is to be expended to save the nutriment contained in dry straw, why is the dung to be wasted by fermentation to dispose the woody fibre or litter mixed with it to decay and dissolve? especially as a powerful disposition to fermentation is obtained by these substances being well saturated with the rice juices of dung.

Sir H. Davy's Lectures on Agricultural Chemistry is a valuable book; and every farmer who reads ought to have it. But he should not follow it, or any other book, (including mine among the rest,) further than the author follows nature and reason. It may be laid down as a maxim in farming, that no practice can be good that is opposed to either. We may all see that favourite systems have such a powerful influence on the mind of man, that they too often cloud his understanding, and reason imperceptibly bends, and becomes subservient to them.

This gentlemen says, "when farm yard dung cannot be immediately applied to crops, the surface should be defended as much as possible. A compact marl or tenacious clay offers the best protection against the air, and before the dung is covered, it should be dried as much as possible." "If the dung is found at any time to heat strongly, it should be turned over and cooled by exposure to the air." "It should befended from the sun. To preserve it under sheds would be of great use, or to make the site of a dung-hill on the north side of a wall; the floor on which the dung is heaped should, if possible, be paved with flat stones, and there should be a little inclination from each side towards the centre in which there should be drains, connected with a small well, furnished with a pump, by which any fluid matter may be collected for the use of the land."

A shaded situation is unquestionably best; and if the dung can be well covered under vacant sheds, the practice may be good. But to build sheds for storing dung, or pave bottoms, dig wells, and form cement for the bottoms and sides of them, in the usual way, and make pumps, &c. is entirely inconsistent with the economy of farming. No profit derived from it will remunerate the expense; especially as the dung may be quite as well, and perhaps better saved, in the simple manner that has been before pointed out. If gentlemen wish to instruct the common farmer, they should commence by introducing the utmost possible economy in every department of agriculture. If this be done, it will soon be found that the common farmer, (at least in this country,) is capable of exercising his reason, (and that judiciously too,) on subjects with which his interest is connected. It is the enormous and useless expense that is but too generally attached to gentlemen farming, which causes common farmers to reject what

gentlemen propose. These men are not, as too many suppose, divested of understanding; on the contrary, they show their good sense by not giving into practices that would infallibly ruin them, unless they had become so wealthy as not to be seriously affected by adopting them: but to proceed.

Drying the dung as much as possible before it is heaped, must cause much of the rich volatile matter to escape, and cost a good deal of labour. Opening and turning the dung over every time it heats strongly, is a very expensive and destructive business; and well calculated to scatter its best properties in the air. Notwithstanding, some gentlemen say that in drying dung nothing but the water escapes, the fœtid smell of the gaseous effluvia arising from it determines the contrary.

Farmers might make a valuable addition to their farm yard manure, by digging a hole at a convenient distance from their kitchen, about three or four feet deep, and sufficiently wide to form a common receptacle for the various matters originating in and about the house, extending a paved gutter from the kitchen to it, to conduct soap suds and other useless slops into it. When it becomes offensive, the offending matter should be covered with earth. That which was thrown up in digging the hole may be applied so long as it lasts. Care should be taken to prevent the water from without from running into it. The receptacle may be hid from sight by planting an evergreen hedge around it, leaving an opening at the back for putting in and taking out the contents.

The necessary may be placed by the side of the receptacle; and every thing from it readily conveyed among the rest of the compost; provided the farmer is willing to convey the disagreeable but very valuable contents to his fields, and plough them under the soil; or can hire others to do this for him.

The effects produced by this very powerful compost, will be seen by his neighbours, and others may follow his laudable example, until the beneficial practice of using night soil for manure, be brought into as general use as it has been in other countries, where habit has rendered the use of this article familiar.

If the yards be duly swept, and the valuable contents be put into the receptacle, the health of the family will be promoted, and visiters will not be annoyed by the stench arising from privies, and stagnant gutters, too seldom, if ever, cleaned out.

ART. II.—*Outlines of Horticultural Chemistry:—Manures.* *By* G. W. JOHNSON, *Esq. of Great Totham, Essex.*

[FROM THE GARDENER'S MAGAZINE.]

(Continued from page 127.)

Some manures ameliorate a soil by absorbing moisture from the atmosphere. This property is at least as beneficial to ground that is aluminous as to that which is siliceous; for it is equally useless to either, during such periods of the year as are characterised by a plentiful deposition of rain, but in the droughts of summer, when moisture is much wanting to plants, it is beneficial to both: in very dry seasons it is even of greater importance to clayey soils than to light ones; for vegetation on the former suffers more from long-continued drought than on the latter, inasmuch as that moisture being equally exhaled from each, the surface of the clayey soil becomes caked and impervious to the air, which is the only grand source of compensatory moisture that is available to the languishing plants, and which is more open to those which grow on light, and consequently more pervious soils.

The following table of the comparative absorbent powers of many, &c., is chiefly extracted from *An Essay on the Uses of Salt in Agriculture, &c.*, by my brother, Mr. C. Johnston:

1000 parts.	Parts.
Horse dung, evaporated previously to dryness, at a temperature of 100°, absorbed during an exposure of three hours to air saturated with moisture at 62°	145
Putrefied tanner's bark, under similar circumstances, (66°)	145
Unputrefied ditto	115
Cow dung	130
Pig ditto	120
Sheep ditto	81
Pigeon ditto	50
Refuse marine salt (60°)	49½
Soot (68°)	36
Burnt Clay	29
The richest soil (in one hour)	23
Coal-ashes	14
Lime (part carbonate)	11
Crushed rock salt	10
Gypsum	9
Chalk	4

The absorbing power of a manure is much influenced by the state in which it is presented to the atmosphere. In a finely divided state, mere capillary attraction assists it; hence, as we have before insisted, the importance of keeping the soil frequently stirred, by hoeing, &c. The most ancient

Roman agriculturists were aware of this. "What is good tillage?" says Cato, in his *De Re Rustica*. "*To plough.* What is the second thing? *To plough.* The third is to manure." But a mere mass of cotton, by means of capillary attraction, will absorb moisture from the air, yet it parts with it at a very slight elevation of temperature; it is of importance, therefore, to ascertain which are the manures that not only absorb but *retain* moisture powerfully. The following results of my experiments throw some light on this point:—

10 parts.		Minutes.
	Pig dung, evaporated to dryness, at a temperature of 106°, and then moistened with six parts of water, required for being reduced to dryness again, at the above temperature	135
	Horse dung under similar circumstances	90
	Common salt	75
	Soot	75
	Rich soil	32
	Chalk	29
	Poor soil (siliceous)	23
	Gypsum	18

These experiments point out a criterion by which we easily ascertain the comparative richness of any two given soils or manures; the most fertile will be the most absorbent and retentive.

Some manures increase the growth and vigour of plants, by stimulating their absorbent and assimilating organs. This will only be admitted by those, who, like myself, allow that plants are gifted with sensation; space cannot be permitted me to argue as I would to those who dissent from this opinion, but a few facts, as enumerated in my *Outlines of Botany*, (*Gard. Mag.* Vol. II. p. 338,) will, I think, demonstrate that it is impossible to deny that they possess some degree of sensation. "The Venus's Fly Trap (Dionæ*a* muscípula) has jointed leaves, which are furnished on their edges with a row of strong prickles. Flies, attracted by honey which is secreted in glands on their surface, venture to alight upon them; no sooner do their legs touch these parts, than the sides of the leaves spring up, and locking their rows of prickles together, squeeze the insects to death. The well-known Sensitive Plant (Mimòsa sensitìva) shrinks from the slightest touch. O'xalis sensitìva and Smíthi*a* sensitìva are similarly irritable, as are the filaments of the stamens of the berberry. One of this sensitive tribe, *H*edysarum gyrans, has a spontaneous motion; its leaves are frequently moving in various directions, without order or co-operation. When an insect inserts its proboscis between the converging anthers of a kind of Dog's-bane (Apócynum *a*drosæmifòlium,) they

they close with a power usually sufficient to detain the intruder until his death." The more I study the phenomena of vegetation, the more I feel convinced on this point. How often have I heard a farmer reply to an observation upon the tardy growth of turnips,—"They will not grow apace, until their leaves are large enough for the wind to take hold of them;" and this is only because plants cannot be healthy and vigorous without exercise. Mr. Knight found that trees which were regularly shaken every day in his green-house, grew more rapidly and strong than others which were kept still.

The stimulating powers of excrementitious manures arise from the salts of ammonia they contain. Sir H. Davy found vegetation assisted by solutions of muriate of ammonia (Sal ammoniac,) carbonate of ammonia (Volatile salt,) and acetate of ammonia. Night-soil, one of the most beneficial of manures, surpasses all others in the abundance of its ammoniacal constituents in the proportion of 3 to 1. It may be observed that the nearer any animal approaches to man in the nature of its food, the more fertilising is the manure it affords. I have no doubt that a linguishing plant, one, for example, that has been kept very long with its roots out of the earth, as the orange trees imported from Italy, &c., might be most rapidly recovered, if its stem and branches were steeped in a tepid, weak solution of carbonate of ammonia; and, when planted, an uncorked phial of the solution were suspended to one of the branches, to impregnate the atmosphere slightly with its stimulating fumes.

(To be continued.)

PART III.

MISCELLANEOUS AGRICULTURAL ITEMS.

"*Siberian Rice.*—In Russia a kind of rice is used which grows in Siberia, and is more succulent than that of America."—*New-England Farmer.*

☞ We hope some correspondent of our Minister at the Court of Russia, Henry Middleton, Esq. himself a Rice-planter, will transmit this notice to him, with a request to make inquiry for the seed of the *Siberian Rice.—Editor of Southern Agriculturist.* J. G.

Gardens about London.—From Kensington through Hammersmith, Chiswick, Brentford, Isleworth, and Twickenham, seven miles of garden ground, may be denominated the great London fruit garden north of the Thames. An upper and under crop taken at the same time; the upper the fruits on trees; the under, strawberries and various herbaceous crops. To increase shelter and warmth in autumn, they raise banks of soil five feet high, facing the south and sloped to an angle of 45°; on these they plant endive in September, and near the bottom, from October to Christmas, they drill a row of pease; the endive is preserved from rotting, and the peas come in maturity nearly as early as if under a wall. The springs here lie eight or ten feet under the surface, and the water is raised from the wells by a bucket and lever balanced by a stone. Three thousand acres of ground here, employing five persons, a man, his wife and three children, per acre, during the winter half year, and during summer, five persons more, chiefly Welch women. Estimated produce £100 per acre.—*Gardener's Magazine.*

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Strawberries.—I have been induced to make the present communication, from having been informed by a young man from near Salem, of the management of a bed in his father's garden, which was planted about twenty years ago, and still continues very productive. It contains about two square perches—and the present season twenty quarts were gathered in a morning, and strawberries measuring three inches and three-fourths round, were frequently found. The manner in which this bed has been managed and made so productive, is, as soon as the fruit is all gathered, mow the vines close off, and cover the bed four or five inches with rotten wood, drawn fresh from the wood land, where old logs have been left to decay. The strawberry vines will shoot through this covering, and there will be no farther labour necessary, but to keep the running vines cut off to prevent their taking root; twelve inches square was the distance at which the plants of the above described bed were planted.—*Village Record.*

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Asparagus Improved by Irrigation.—W. J. Foster, a correspondent for the Gardener's Magazine asserts that although writers on the cultivation of asparagus generally recommend a dry sloping situation he has succeeded in circumstances directly the reverse. That some beds of his, which were completely flooded from the 1st of October to the middle of February to the depth of from 6 to 12 inches proved unusually productive. He is of opinion that the cultivation of this vegetable may be improved by intentional flooding. Mr. Main observes on this that "We are all aware of the effect of

irrigation on meedow land; the liquid covering which excludes the air and not the light stimulates the vegetation surprisingly, it being only a denser medium, in which perhaps, the principal food of plants exists, and where no other quality necessary for them is wanting. When motion to the water, also, can be given it is an additional advantage; and now, since the discovery of forming fountain wells, by which small, never failing streams of water can be procured [we should be glad to hear something more of this discovery] and carried in any direction, we really think it within the bounds of practicability to force asparagus, and perhaps several other plants by means of water only. It has also struck us that Mr. Foster's experience accounts most satisfactorily for the superiority of the Gravesend, Deptford and Battersea crops of asparagus, the alluvial banks of the Thames being so near an approach to the circumstances mentioned by our correspondents.—*New-England Farmer.*

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The following remarkable passage from a report of the Secretary of State for the year '92, is copied here as containing sound and liberal doctrine very pertinent to the present times, and well deserving the consideration of those to whom is intrusted the management of our national affairs:—

"Instead of embarrassing commerce under piles of regulating laws, duties and prohibitions, could it be relieved from all its shackles, in all parts of the world; could every country be employed in producing that which nature has best fitted it to produce, and each be free to exchange with others mutual surplusses for mutual wants, the greatest mass possible would then be produced of those things which contribute to human life and human happiness; the numbers of mankind would be increased and their condition bettered. Would even a single nation begin with the United States this system of free commerce, it would be adviseable to begin it with that nation; since it is one by one only, that it can be extended to all. When the circumstances of either party render it expedient to levy a revenue, by way of impost on commerce, its freedom might be modified in that particular, by mutual and equivalent measures, preserving it entire in all others. Some nations, not yet ripe for free commerce in all its extent might still be willing to modify its restrictions and regulations for us, in proportion to the advantages which an intercourse with us might offer. Particularly they may concur with us in reciprocating the duties to be levied on each side, or in compensating any excess of duty by equivalent advantages of another nature. Our commerce is certainly of a character to entitle it to favour in most countries. The commodities we offer are either necessaries of life or materi-

als for manufacture or convenient subjects of revenue; and we take in exchange either manufactures, when they have received the last finish of art and industry, or mere luxuries. Such customers, whose demands, increasing with their wealth and population, must very shortly give employment to the whole industry of any nation whatever, in any line of supply they may get into the habit of calling for from it."

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Horses.—The following remarks upon horses are copied from the publication of an eminent farrier in Europe; and we think them worth the perusal of farmers generally.

The pulse of a horse in health, is from 30 to 40 beats in a minute, and is easily felt by pressing the finger gently upon the temporal artery, which is situated about an inch and a half backwards from the corner of the eyes.

Horses have not the facility of puking, or even belching wind out of their stomachs, and therefore are peculiarly subject to wind cholic.

When a horse has been over ridden, blood spots may be seen in the white of his eyes.

A limber dock is sure evidence of a limber back; that is, a weak one.

A horse that is hardy and good for business, has a short back bone, which terminates forward of the hip bones.

A decoction of white oak bark will kill botts by tanning them, and they will become shrivelled, as scarcely to be discernable when discharged.

The principal signs of a good horse are these—the eyes far apart in the head, and large and bright; the quirl high in the forehead; one or two on the neck is a good sign; the neck well set on high, the shoulder blades pretty high, and converging to a point; the breast full and large, and so also behind, the body round, for flat bodied or slab sided horses are weak natured, the dock stiff, going wide behind, for if the gambols knock together, it shows that the horse is feeble; chewing the bit when provoked, is a good sign.

It is a Spanish proverb, that dapple grey will sooner die than tire.

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[COMMUNICATION.]

At the Anniversary Meeting of the *St. Helena Island Agricultural Society*, the Premium of a *Silver Cup* was awarded to Mr. JAMES FRIPP, for having reared five pounds of the *finest Sea-Island Cotton.*

Resolved, That the same be published in the Southern Agriculturist, and in the Beaufort Gazette.

WM. FRIPP, *Secretary.*

St. Helena, April 2, 1839.